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Sorption of cadmium and copper ions on natural and synthetic hydroxylapatite particles.

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ABSTRACT:

The sorption of divalent cadmium and copper ions from aqueous solutions on natural and synthetic hydroxyapatite was investigated by the batch method and under dynamic conditions in columns at 22 °C and pH 5. The effect of cadmium and copper concentration on sorption was studied. Both types of apatites are efficient, despite their different composition and morphology. The sorption mechanism involves an ion exchange for Cd(II), while Cu(II) leads to precipitation of a newly formed solid. Thus, the sorption efficiency depends on the experimental conditions and the specific physicochemical properties of the apatites used. The sorption isotherms were fitted to the Langmuir equation.